

WHAT IS CLAIMED IS:

- 1                   1.       A method for processing integrated circuit devices including a water  
2 recycling process, the process comprising:  
3                   operating a chemical mechanical planarization process, the chemical mechanical  
4 planarization process including a discharge for process water, the process water being used to  
5 process one or more semiconductor wafers;  
6                   selectively discharging process water from the discharge;  
7                   transferring the process water from the chemical mechanical planarization process  
8 to a facility process; and  
9                   using the discharged water in the facility process.
- 1                   2.       The method of claim 1 wherein the facility process includes a cooling  
2 tower, a local scrubber.
- 1                   3.       The method of claim 1 wherein the discharge water is characterized by a  
2 pH value ranging from about 6 to about 10.
- 1                   4.       The method of claim 1 wherein the discharge water is characterized by a  
2 conductivity is less than about 2000  $\mu$  siemens per centimeter.
- 1                   5.       The method of claim 1 wherein the selectively discharging is provided  
2 using a control valve coupled to the discharge, the control valve being coupled to computer  
3 hardware.
- 1                   6.       The method of claim 1 wherein the discharge includes a plurality of lines,  
2 each of the lines being coupled to one or more processing stations.
- 1                   7.       The method of claim 1 wherein the transferring to the facility process  
2 comprises transferring to a collection tank before transferring the discharge water to the facility  
3 process.

1                   8.       The method of claim 1 wherein the selectively discharging comprises  
2   outputting a signal in response to process in computer software to open a valve to release the  
3   process water.

1                   9.       The method of claim 1 wherein the process water is ultra-pure water  
2   having a resistivity of about 18 Mega-ohms.

1                   10.      The method of claim 1 wherein the transferring of the process water from  
2   the chemical mechanical planarization process to a facility process occurs free from any  
3   chemical treatment between the chemical mechanical planarization process and the facility  
4   process.

1                   11.      A method for processing integrated circuit devices including a water  
2   recycling process, the process comprising:  
3                   operating a chemical mechanical polishing process using an incoming stream of  
4   ultra-pure water, the chemical mechanical polishing process including a discharge for used ultra-  
5   pure water, the ultra-pure water being used to process one or more semiconductor wafers and  
6   discharged through the discharge to form a facility water;  
7                   selectively discharging the facility water from the discharge of the chemical  
8   mechanical polishing process and transferring the facility water from the discharge of the  
9   chemical mechanical polishing process to a facility process, the transferring being free from any  
10   chemical treatment of the discharged process water; and  
11                  using the discharged water in the facility process.

1                   12.      The method of claim 11 wherein selectively discharging is provided by a  
2   valve coupled to the chemical mechanical planarization process.

1                   13.      The method of claim 11 wherein the ultra-pure water is characterized by a  
2   resistance of about 18 mega-ohm.

1                   14.      The method of claim 13 wherein the ultra-pure water is substantially free  
2   from particles greater than about 0.05 microns in dimension.

1                    15.     The method of claim 11 wherein the transferring the facility water from  
2 the discharge of the chemical mechanical polishing process to a facility process includes storing  
3 the facility water in a storage facility before use by the facility process.

1                    16.     The method of claim 15 wherein the facility process is selected from a  
2 cooling process, a scrubbing process.

1                    17.     A system for chemical mechanical polishing, the system comprising:  
2 a plurality of processing stations, each of the processing stations being configured  
3 to perform at least one processing operation;  
4 a discharge line coupled to one or more of the processing stations to receive  
5 discharge water;  
6 a valve coupled to the discharge line to selectively output the discharge water for  
7 use in a facility process; and  
8 a drain line coupled to the discharge line for outputting the discharge water to a  
9 drain.

1                    18.     The system of claim 17 further comprising a computer system coupled to  
2 the valve, the computer system including one or more memories, the one or more memories  
3 including a first code directed to actuate the value to output the discharge water for use in the  
4 facility process.

1                    19.     The system of claim 17 wherein the discharge line comprises a plurality of  
2 lines.

1                    20.     The system of claim 17 further comprising a source line for ultra-pure  
2 water coupled to one or more of the processing stations, the ultra-pure water being discharge  
3 water after being used by one or more of the processing stations.